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40

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/059,044	01/30/2002	Patrick J. Butler	1348.105-US	4467
7590	04/19/2006		EXAMINER	
EPSTEIN & GERKEN			AWAI, ALEXANDRA F	
1901 RESEARCH BOULEVARD				
SUITE 340			ART UNIT	PAPER NUMBER
ROCKVILLE, MD 20850-3164			3663	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/059,044	BUTLER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Alexandra Awai	3663	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 29 March 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.  
 4a) Of the above claim(s) 7 is/are withdrawn from consideration.  
 5) Claim(s) 2,4,8,9,12-14,16 and 18 is/are allowed.  
 6) Claim(s) 1,3,5,6,10,11,15 and 17 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 30 January 2002 and 29 March 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 2/8/2006 have been fully considered but they are not persuasive. Applicant's arguments include that the clamp design taught by Jensen et al. the sole cited reference, serves a different purpose by virtue of its different structure, and furthermore that the claimed features of the present invention are not found in the prior art. Examiner acknowledges that claims 2, 4, 8, 9, 12, 14, 16 and 18 have been amended to be in independent form, as allowable subject matter was indicated in the Office Action dated 11/7/2006. With regard to claims 1, 3, 5, 6, 10, 11, 15 and 17, it is considered that the rejections set forth in section 3 of the Office Action dated 11/7/2006 have not been overcome either by the arguments or amendments. Accordingly, those rejections are incorporated herein by reference in their entirety.

In response to applicant's argument that Jensen et al. constitutes nonanalogous art because the device of the prior art does not clamp the same structure as that of the present invention, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both clamps provide additional reinforcement to welded joints. The argument that, because the claim preamble allegedly gives "life and meaning" to the claim, the claimed clamp members are not and cannot be considered structurally similar to the clamp members disclosed by Jensen et al.

is an obvious non sequitur. It certainly does not directly follow that two clamps having different purposes and different structures may not be considered structurally similar. Moreover, if the structures that distinguish the clamps are not actively and particularly claimed to the requisite degree, those two clamps would not be patentably distinct.

The clamp is an old and notoriously well-known technology that restrains objects by applying compressive force to their surfaces. Any person familiar with clamps would readily appreciate that a clamp for holding a pipe with a particular cross-section may ideally have an inner compartment shaped to exactly accommodate the cross-section of the pipe. Such a clamp would be better able to apply a compressive force to a larger surface area, creating more frictional resistance to movement or separation and advantageously distributing the material stress, than a clamp having an inner compartment that does not match the clamped object. Patent No. 5,237,909 to Pirhadi, which was made of record in the previous Office Action, provides an example of a clamp with conforming inner surfaces. Because Applicant has claimed the clamp, *per se*, as opposed to an apparatus comprising the clamp *and* a feedwater sparger within a boiling water reactor vessel, the differences in disposition of the claimed clamp and prior art are rendered obvious as the prior art teaches or suggests the *claimed* features and may be applied in the same way as the claimed invention. Firstly, the clamp taught by Jensen et al. does provide internal walls (see Fig. 4) and may provide a “close enough fit for the attachment plate and the end plate to be constrained against disconnecting from each other” (claim 1) despite the fact that it does not have a compartment that exactly accommodates the bracket assembly – that is, the curvature of the clamp member may be positioned to confine the attachment plate and end plate. Secondly, adjusting the inner compartment of the clamp to more exactly circumscribe the

restrained object is no more than an application of basic knowledge of compressive and frictional forces as discussed above, or alternatively, the teachings of Pirhadi. The unsupported statement that the clamp taught by Jensen et al. cannot constrain the plates (p. 27 of the Remarks) is not considered credible evidence that this is the case. The rejections set forth in the Office Action dated 11/7/2006 will be reiterated with additional explication to demonstrate how the claimed features correspond to features of the cited art, and how the available prior art teaches and suggests the claimed invention.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Applicant discusses in the Brief Discussion of the Related Art that feedwater sparger end bracket assemblies normally comprise plates connected by welds. Knowledge within the level of ordinary skill at the time of invention includes the following: 1) that welds may fail, and 2) that there exist clamps for reinforcing welds on other aspects of the sparger, e.g., the clamp taught by Jensen et al. The motivation given by Jensen et al. for clamping a welded area of the sparger is to prevent unacceptable leakage and ensure that the core spray system delivers the necessary volumetric flow rate to the reactor core. Because skilled artisans would know that leakage could also occur were the weld in question placed at the end

bracket assembly, they would be motivated to use the technology at their disposal to prevent the undesirable leakage.

***Drawings***

2. Figures 1-6 (including amended Figs. 1 and 2) should be designated by a legend such as - -Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3, 5, 6, 10, 11, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jensen et al. alone, or further in view of Pirhadi.

Claims 1, 3, 5, 6, 10, 11, 15 and 17 are directed to a clamp for use with a sparger end bracket as a means of reinforcing the welds joining the bracket body, end plate and sparger conduit. They claim a clamp structure consisting of upper and lower members and a connecting member (i.e., a threaded screw for tightening) that is configured to engage the surfaces of the clamped body (bracket, end plate and conduit) in a fitted manner. Note that recitations of the intended use (i.e., “for installation on a feedwater sparger end bracket assembly” or “to receive a first portion of the attachment plate”) of the claimed invention must result in a non-obvious structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. As discussed in section 1 of this Office Action, the clamp design taught by Jensen et al. is capable of performing the intended use.

Jensen et al. discloses a clamp for installation on an upper T-box of a feedwater sparger assembly (Fig. 2), which comprises upper and lower members that are shaped to conform to the shape of the clamped body (conduits 18 and 20, as well as T-box 26) and secured around the pipe junction by threaded connecting members (e.g., 48A). Each connecting member has a central longitudinal axis that is parallel to the central longitudinal axis of the boiling water reactor vessel. The upper and lower members read upon the first and second clamp members of

the present claims. They are configured with recesses, compartments, shoulders, etc. and attached with a cover plate (article 80), as can be seen in Fig. 2, in order to envelop the conduits and reinforce the welds joining the pipes, T-box and T-box cover – which is analogous to the end plate of the bracket assembly. It is noted that the “shoulder means”, “wall means” and “connector means” of claim 15 do not invoke 35 U.S.C. § 112, sixth paragraph, as the terms themselves contain sufficient structural limitations for performing these functions. Claims 15 and 17 are therefore rendered obvious for the same reasons as claims 5, 6 and 11.

Because the enveloped conduit has a circular cross-section, the compartments, each comprising a recess and shoulders (Fig. 4) do not appear exactly as recited in the claims. However, it is apparent that the recited surfaces and shoulders define angular compartments in order to exactly accommodate a clamped object having an angular cross-section. Adjusting the inner compartments of the prior art to be angular, and thus possessed of the claimed inner and outer shoulders and surfaces/recesses is no more than an obvious change in shape clearly motivated by what is known in the art as discussed in section 1 of this Office Action. See *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). As stated in section 1, Pirhadi provides an example of a clamp with conforming inner surfaces, thus demonstrating that it is known in the art to adapt the shape of a clamp to advantageously confine the clamped object. The conforming inner surfaces are formed in each of the two clamp members – both of which have an opening, and define angular internal compartments between at least two walls (Fig. 3). As the secondary reference has only been specifically recited in this Office Action to support the prior common knowledge finding (i.e., that it is obvious to adapt the inner contours of a clamp to conform to the shape of a clamped object), this Office Action may be made final (see MPEP § 2144.04(D)).

The T-box clamp was designed to provide structural integrity to the conduit junction (i.e., the pipes, T-box and T-box cover) and to hold the welded joint together in the event of weld failure – that is, solving the same problem as the invention of the present application for a substantially similar feedwater sparger component. It would have been obvious to one of ordinary skill in the art to adapt the inner surfaces of the Jensen et al. clamp as exemplified by Pirhadi to enclose an angular feedwater end bracket assembly as previously argued, thus encompassing the limitations of the aforementioned claims. This motivation, which is more particularly outlined in section 1 of this Office Action, is based on the desire to “prevent unacceptable leakage and to ensure that the core spray system delivers the necessary volumetric flow rate to the reactor core” (column 1, lines 44+); thus making expedient and economic use of available technology.

*Allowable Subject Matter*

6. Claims 2, 4, 8, 9, 12-14, 16 and 18 are allowed.

*Conclusion*

7. Applicant's amendment and remarks necessitated the reiterated and more fully explained grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

Art Unit: 3663

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexandra Awai whose telephone number is (571) 272-3079. The examiner can normally be reached on 9:30-6:00 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AA  
April 10, 2006

JACK KEITH  
SUPERVISORY PATENT EXAMINER